National Standards Authority of Ireland

IRISH STANDARD

I.S. EN 303-3:1999

ICS 91.140.10

HEATING BOILERS - PART 3: GAS-FIRED CENTRAL HEATING BOILERS - ASSEMBLY COMPRISING A BOILER BODY AND A FORCED DRAUGHT BURNER

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EN 303-3:1998/AC

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English version
Version Française
Deutsche Fassung

Heating boilers - Part 3: Gas-fired central heating boilers - Assembly comprising a boiler body and a forced draught burner

Chaudières de chauffage - Partie 3: Chaudières de chauffage central utilisant les combustibles gazeux - Assemblage d'un corps de chaudière et d'un brûleur à air soufflé

Heizkessel - Teil 3: Zentralheizkessel für gasförmige Brennstoffe - Zusammenbau aus Kessel und Gebläsebrenner

This corrigendum becomes effective on 7 June 2006 for incorporation in the three official language versions of the EN.

Ce corrigendum prendra effet le 7 juin 2006 pour incorporation dans les trois versions linguistiques officielles de la EN.

Die Berichtigung tritt am 7.Juni 2006 zur Einarbeitung in die drei offiziellen Sprachfassungen der EN in Kraft.

EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Ref. No.:EN 303-3:1998/AC:2006 D/E/F

English version

Replace Table 6 with the following:

Table 6 – Calculation of the useful part load efficiency

Conditions of operation		Heat input	Cycle time (s)	Meas.	Useful efficiency (%)
1	30 % reduced rate	$Q_2 = 0{,}3 \cdot Q_n$	$t_2 = 600$	η_2	$\eta_u = \eta_2$
2	Full rate Controlled off	$Q_1 = Q_n$ [1]) Q_3 = permanent ignition burner	$t_1 = \frac{180\ Q_1 - 600\ Q_3}{Q_1 - Q_3}$ $t_3 = 600 - t_1$	η_1 P_s	$\eta_u = \frac{\frac{\eta_1}{100}\ Q_1 t_1 + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_1 t_1 + Q_3 t_3} \times 100$
3	Reduced rate Controlled off	$Q_{21} > 0{,}3 \cdot Q_n$ Q_3 = permanent ignition burner	$t_{21} = \frac{180\ Q_{21} - 600\ Q_3}{Q_{21} - Q_3}$ $t_3 = 600 - t_{21}$	η_{21} P_s	$\eta_u = \frac{\frac{\eta_{21}}{100}\ Q_{21} t_{21} + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_{21} t_{21} + Q_3 t_3} \times 100$
4	Full rate Reduced rate	$Q_1 = Q_n$ [1]) $Q_{22} < 0{,}3 \cdot Q_n$	$t_1 = \frac{180\ Q_1 - 600\ Q_{22}}{Q_1 - Q_{22}}$ $t_{22} = 600 - t_1$	η_1 η_{22}	$\eta_u = \frac{\frac{\eta_1}{100}\ Q_1 t_1 + (\frac{\eta_{22}}{100})\ Q_{22} t_{22}}{Q_1 t_1 + Q_{22} t_{22}} \times 100$
5	Reduced rate 1 Reduced rate 2	$Q_{21} > 0{,}3 \cdot Q_n$ $Q_{22} < 0{,}3 \cdot Q_n$	$t_{21} = \frac{180\ Q_{21} - 600\ Q_{22}}{Q_{21} - Q_{22}}$ $t_{22} = 600 - t_{21}$	η_{21} η_{22}	$\eta_u = \frac{\frac{\eta_{21}}{100}\ Q_{21} t_{21} + \frac{\eta_{22}}{100}\ Q_{22} t_{22}}{Q_{21} t_{21} + Q_{22} t_{22}} \times 100$
6	Full rate Reduced rate Controlled off	$Q_1 = Q_n$ [1]) Q_2 Q_3 = permanent ignition burner	t_1 = measured value (see annex Q) $t_2 = \frac{(180 - t_1) Q_1 - (600 - t_1) Q_3}{Q_2 - Q_3}$ $t_3 = 600 - (t_1 + t_2)$	η_1 η_2 P_s	$\eta_u = \frac{\frac{\eta_1}{100} Q_1 t_1 + \frac{\eta_2}{100} Q_2 t_2 + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_1 t_1 + Q_2 t_2 + Q_3 t_3} \times 100$

[1]) Q_n is replaced by the arithmetic mean Q_a of the maximum and minimum heat input for range-rated boilers.

Replace Table 5 with the following:

Table 5 – Symbols and quantities needed to calculate the efficiency at part load

Operational phases of the main burner	Heat input kW	Operational time s	Measured values at 50 °C
			efficiency %
Full rate	Q_1	t_1	η_1
Reduced rate	Q_2	t_2	η_2
Reduced rate > 0,3 Q_1	Q_{21}	t_{21}	η_{21}
Reduced rate < 0,3 Q_1	Q_{22}	t_{22}	η_{22}
Controlled off	Q_3	t_3	Standby losses P_s (kW)

Version française

Remplacer le tableau 6 par le suivant:

Tableau 6 – Détermination du rendement utile à charge partielle

Conditions de fonctionnement		Débit calorifique	Temps de cycle (s)	Mesures	Rendement utile (%)
1	Débit réduit 30 %	$Q_2 = 0{,}3 \cdot Q_n$	$t_2 = 600$	η_2	$\eta_u = \eta_2$
2	Plein débit	$Q_1 = Q_n$ [1)]	$t_1 = \frac{180\ Q_1 - 600\ Q_3}{Q_1 - Q_3}$	η_1	$\eta_u = \frac{\frac{\eta_1}{100}\ Q_1 t_1 + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_1 t_1 + Q_3 t_3} \times 100$
	Arrêt par régulation	Q_3 = brûleur d'allumage permanent	$t_3 = 600 - t_1$	P_s	
3	Débit réduit	$Q_{21} > 0{,}3 \cdot Q_n$	$t_{21} = \frac{180\ Q_{21} - 600\ Q_3}{Q_{21} - Q_3}$	η_{21}	$\eta_u = \frac{\frac{\eta_{21}}{100}\ Q_{21} t_{21} + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_{21} t_{21} + Q_3 t_3} \times 100$
	Arrêt par régulation	Q_3 = brûleur d'allumage permanent	$t_3 = 600 - t_{21}$	P_s	
4	Plein débit	$Q_1 = Q_n$ [1)]	$t_1 = \frac{180\ Q_1 - 600\ Q_{22}}{Q_1 - Q_{22}}$	η_1	$\eta_u = \frac{\frac{\eta_1}{100}\ Q_1 t_1 + (\frac{\eta_{22}}{100})\ Q_{22} t_{22}}{Q_1 t_1 + Q_{22} t_{22}} \times 100$
	Débit réduit	$Q_{22} < 0{,}3 \cdot Q_n$	$t_{22} = 600 - t_1$	η_{22}	
5	Débit réduit 1	$Q_{21} > 0{,}3 \cdot Q_n$	$t_{21} = \frac{180\ Q_{21} - 600\ Q_{22}}{Q_{21} - Q_{22}}$	η_{21}	$\eta_u = \frac{\frac{\eta_{21}}{100}\ Q_{21} t_{21} + \frac{\eta_{22}}{100}\ Q_{22} t_{22}}{Q_{21} t_{21} + Q_{22} t_{22}} \times 100$
	Débit réduit 2	$Q_{22} < 0{,}3 \cdot Q_n$	$t_{22} = 600 - t_{21}$	η_{22}	
6	Plein débit Débit réduit	$Q_1 = Q_n$ [1)] Q_2	t_1 = valeur mesurée (voir annexe Q) $t_2 = \frac{(180 - t_1) Q_1 - (600 - t_1) Q_3}{Q_2 - Q_3}$	η_1 η_2	$\eta_u = \frac{\frac{\eta_1}{100} Q_1 t_1 + \frac{\eta_2}{100} Q_2 t_2 + 0{,}8\ Q_3 t_3 - P_s t_3}{Q_1 t_1 + Q_2 t_2 + Q_3 t_3} \times 100$
	Arrêt par régulation	Q_3 = brûleur d'allumage permanent	$t_3 = 600 - (t_1 + t_2)$	P_s	

[1)] Q_n peut être la moyenne arithmétique Q_a des débits calorifiques maximal et minimal pour les chaudières avec organe d'ajustement aux besoins thermiques de l'installation de chauffage